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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/586,267 | 07/14/2006 | Nigel Paul Schofield | M03B327 | 7751 |
| 71134 | 7590 | 01/13/2010 | EXAMINER | |
| Edwards Vacuum, Inc. 2041 MISSION COLLEGE BOULEVARD SUITE 260 SANTA CLARA, CA 95054 | | | TRIEU, THERESA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3748 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 01/13/2010 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LORETTA.SANDOVAL@EDWARDSVACUUM.COM

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/586,267 | Applicant(s) SCHOFIELD, NIGEL PAUL | |
| | Examiner Theresa Trieu | Art Unit 3748 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the applicants' RCE filed on Nov. 9, 2009.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Nov. 9, 2009 has been entered.

Claims 1, 11, 18 have been amended. Claims 1-21 are pending in this application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Wycliffe et al. (Wycliffe) (Patent Number 3,677,664).

Regarding claims 1, 2 and 9, as shown in Fig. 4, Wycliffe discloses a screw pump comprising: a chamber defining with first and second externally threaded rotors 4, 5 mounted on respective shafts 10 rotatably disposed for counter-rotation within the chamber a plurality of flow paths (not numbered; however, read by the Examiner as the arrow above the elements having a reference 4 and 5) having respective fluid inlets wherein a first one and a second one of the respective inlets are located at a common low pressure side of the chamber, and wherein

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threads of the first and second rotors 4, 5 are intermeshed at a location adjacent to the first and second inlets (not numbered; however, clearly seen in Fig. 4), such that fluid entering the chamber via the first and second inlets is moved through the flow paths by the first and second rotors in a manner of positive displacement; a fluid outlet (see Fig. 4) is located towards or at a common high pressure side of the chamber; a pump body¹⁴ defining said chamber, said body having first and second opposing plates (not numbered; however, clearly seen in Fig. 4) and wherein the first and second ones of the inlets are formed in the first plate and the fluid outlet is formed in the second plate.

Regarding claims 3-7, Wycliffe discloses the first one and the second one of the respective inlets are formed in a common surface defining the chamber (see Fig. 4); the first one and the second one of the respective inlets are located on a common plane (see Fig. 4); a first one and second one of the plurality of the flow paths merge at the fluid outlet of the chamber (see Fig. 4); a first one and a second one of the plurality of the flow paths are arranged such that fluid flows along the flow paths in substantially the same direction (see Fig. 4); a first one of the plurality of flow paths is defined between an internal surface of the chamber 14” and an external surface of the first rotor 4, and a second one of the plurality of flow paths is defined between the internal surface of the chamber 14” and an external surface of the second rotor 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wycliffe in view of legal precedent.

Wycliffe discloses the invention as recited above; however, Wycliffe fails to disclose the difference pressure between the first and second inlets. It is examiner's position that one having ordinary skill in the screw pump art, would have found it obvious to have utilized a first one of the plurality of inlets is at a pressure higher than a pressure at a second one of the plurality of inlets during pumping, since it is merely design parameters depending on the being used for a particular purposes or solving a stated problem. Moreover, there is nothing in the record which establishes that the claimed pressure different between the first and second inlet, presents a novel of unexpected result (*See In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wycliffe in view of Taniguchi et al. (Taniguchi) (Patent Number 6,196,810).

Wycliffe discloses the invention as recited above; however, Wycliffe fails to disclose a first pump and a second pump connected to the inlet of the screw pump.

Taniguchi teaches that it is conventional in the screw pump to utilize a first pumping unit 13a having an exhaust 18a connected to the first inlet 18 of the screw pump and a second pumping unit 13b having an exhaust 18b connected to the second inlet 18 of the screw pump. It would have been obvious to one having ordinary skill in the screw pump art at the time the invention was made, to have utilized the first and second pumps, as taught by Taniguchi in the Wycliffe apparatus, since the use thereof would have provided a high vacuum performance expected of a multistage vacuum pump without shortening the lifetime of the pump.

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5. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behrends et al. (Behrends) in view of Taniguchi et al. (Taniguchi) (Patent Number 6,196,810) and Wycliffe.

Regarding claims 11 and 12, Behrends discloses a pumping arrangement comprising: a pump comprising a body defining a chamber housing first and second externally threaded rotors 20, 22 mounted on respective shafts (the gear pump/rotors obviously has a shaft) rotatably disposed for counter-rotation within the chamber 14, the rotors 20, 22 defining with the body first and second flow paths 32, 34 passing through the chamber, each flow path having a respective fluid inlet located in said body; and wherein the fluid inlet 32 of the first flow path and the fluid inlet of the second flow path 34 are located at a common low pressure side of the chamber; a fluid outlet 16 is located at a common high pressure side of the chamber. However, Behrends fails to disclose first and second pumping unit and the pump being a screw pump.

Taniguchi teaches that it is conventional in the screw pump to utilize a first pumping unit 13a having an exhaust 18a connected to the first inlet 18 of the pump and a second pumping unit 13b having an exhaust 18b connected to the second inlet 18 of the pump. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the first and second sources of Behrends with the first and second pumps Taniguchi as a matter of simple substitution of one known element for another to obtain predictable results. KSR, 550 U.S. (2007).

Wycliffe teaches that it is conventional in the screw pump to utilize the pump being a screw pump (see col. 3, lines 61-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the screw vacuum pump as taught by

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Wycliffe in the modified Behrends device since screw pump are routinely utilized as vacuum pumps.

6. Claims 11-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wycliffe et al. (Wycliffe) in view of Taniguchi et al. (Taniguchi) (Patent Number 6,196,810).

Regarding claim 11, Wycliffe discloses a pumping arrangement comprising: a screw pump comprising a body defining a chamber housing first and second externally threaded rotors 4, 5 mounted on respective shafts 10 rotatably disposed for counter-rotation within the chamber, the rotors 4, 5 defining with the body first and second flow paths (not numbered; however, read by the Examiner as the arrow above the elements having a reference 4 and 5) passing through the chamber, each flow path having a respective fluid inlet located in said body; and wherein the fluid inlet of the first flow path and the fluid inlet of the second flow path are located at a common low pressure side of the chamber (see Fig. 4). However, Wycliffe fails to disclose a first pump and a second pump connected to the inlet of the screw pump.

Taniguchi teaches that it is conventional in the screw pump to utilize a first pumping unit 13a having an exhaust 18a connected to the first inlet 18 of the screw pump and a second pumping unit 13b having an exhaust 18b connected to the second inlet 18 of the screw pump. It would have been obvious to one having ordinary skill in the screw pump art at the time the invention was made, to have utilized the first and second pumps, as taught by Taniguchi in the Wycliffe apparatus, since the use thereof would have provided a high vacuum performance expected of a multistage vacuum pump without shortening the lifetime of the pump.

Regarding claims 12-17 and 19-21, Wycliffe discloses a fluid outlet (not numbered; however, read by the Examiner as the arrow above the element having a reference 10') is

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located at a common high pressure side of the chamber; each one of the respective inlets are formed in a common surface of the body (see Fig. 4); each one of the respective inlets are located on a common plane (see Fig. 4); each one of the respective flow paths merge at the fluid outlet of the chamber (see Fig. 4); each one of the respective flow paths are arranged such that fluid flows along the flow paths in substantially the same direction (see Fig. 4); a first one of the plurality of flow paths 14' is defined between the body 1 and an external surface of the first rotor 4, and a second one of the plurality of flow paths 14' is defined between the body 1 and an external surface of the second rotor 5; the fluid inlet of the first flow path and the fluid inlet of the second flow path are formed in a common surface of the body (see Fig. 4); each of the plurality of inlets are located on a common plane (see Fig. 4).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wycliffe in view of Taniguchi as applied to claim 11 above, and further in view of legal precedent.

The modified Wycliffe discloses the invention as recited above; however, the modified Wycliffe fails to disclose the difference pressure between the first and second inlets. It is examiner's position that one having ordinary skill in the screw pump art, would have found it obvious to have utilized a first one of the plurality of inlets is at a pressure higher than a pressure at a second one of the plurality of inlets during pumping, since it is merely design parameters depending on the being used for a particular purposes or solving a stated problem. Moreover, there is nothing in the record which establishes that the claimed pressure different between the first and second inlet, presents a novel of unexpected result (*See In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT

/Theresa Trieu/
Primary Examiner, Art Unit 3748